Sexual and Urologic Problems of Diabetes

National Diabetes Information Clearinghouse

National Institute of Diabetes and Digestive and Kidney Diseases

NATIONAL INSTITUTES OF HEALTH

Troublesome bladder symptoms and changes in sexual function are common health problems as people age. Having diabetes can mean early onset and increased severity of these problems. Sexual and urologic complications of diabetes are related to the nerve damage diabetes can cause. Men may have difficulty with erections or ejaculation. Women may have problems with sexual response and vaginal lubrication. Urinary tract infections and bladder problems occur more often in people with diabetes. By keeping your diabetes under control, you can lower your risk of sexual and urologic problems.

Diabetes and Sexual Problems

When you want to lift your arm or take a step, your brain sends nerve signals to the appropriate muscles. Internal organs like the heart and bladder are also controlled by nerve signals, but you do not have the same kind of conscious control over them as you do over your arms and legs. The nerves that control your internal organs are called autonomic nerves, and they signal your body to digest food and circulate blood without your having to think about it. Your body's response to sexual stimuli is also involuntary, governed by autonomic nerve signals that increase blood flow to the genitals and cause smooth muscle tissue to relax. Damage to these autonomic nerves is what can hinder normal function.

Sexual Problems in Men With Diabetes

Erectile Dysfunction

Estimates of the prevalence of erectile dysfunction in men with diabetes range from 20 to 85 percent. Erectile dysfunction is a consistent inability to have an erection firm enough for sexual intercourse. The condition includes the total inability to have an erection, the inability to sustain an erection, or the occasional inability to have or sustain an erection. A recent study of a clinic population revealed that 5 percent of the men with erectile dysfunction also had undiagnosed diabetes.*

Men who have diabetes are three times more likely to have erectile dysfunction as men who do not have diabetes. Among men with erectile dysfunction, those with diabetes are likely to have experienced the problem as much as 10 to 15 years earlier than men without diabetes.

In addition to diabetes, other major causes of erectile dysfunction include high blood pressure, kidney disease, alcoholism, and blood vessel disease. Erectile dysfunction may also occur because of the side effects of medications, psychological factors, smoking, and hormonal deficiencies.

* Sairam K, Kulinskaya E, Boustead GB, Hanbury DC, McNicholas TA. Prevalence of undiagnosed diabetes mellitus in male erectile dysfunction. *BJU International.* 2001;88(1):68-71.

U.S. Department of Health and Human Services

If you experience erectile dysfunction, talking to your doctor about it is the first step in getting help. Your doctor may ask you about your medical history, the type and frequency of your sexual problems, your medications, your smoking and drinking habits, and other health conditions. A physical exam and laboratory tests may help pinpoint causes. Your blood glucose control and hormone levels will be checked. The doctor may also ask you whether you are depressed or have recently experienced upsetting changes in your life. In addition, you may be asked to do a test at home that checks for erections that occur while you sleep.

Treatments for erectile dysfunction caused by nerve damage, also called neuropathy, vary widely and range from oral pills, a vacuum pump, pellets placed in the urethra, and shots directly into the penis, to surgery. All these methods have strengths and drawbacks. Psychotherapy to reduce anxiety or address other issues may be necessary. Surgery to implant a device to aid in erection or to repair arteries is another option.

Retrograde Ejaculation

Retrograde ejaculation is a condition in which part or all of a man's semen goes into the bladder instead of out the penis during ejaculation. Retrograde ejaculation occurs when internal muscles, called sphincters, do not function normally. A sphincter automatically opens or closes a passage in the body. The semen mixes with urine in the bladder and leaves the body during urination, without harming the bladder. A man experiencing retrograde ejaculation may notice that little semen is discharged during ejaculation or may become aware of the condition if fertility problems arise. His urine may appear cloudy; analysis of a urine sample after ejaculation will reveal the presence of semen.

Poor blood glucose control and the resulting nerve damage are associated with retrograde ejaculation. Other causes include prostate surgery or some blood pressure medicines.

Retrograde ejaculation caused by diabetes or surgery may be improved with a medication that improves the muscle tone of the bladder neck. A urologist experienced in infertility treatments may assist with techniques to promote fertility, such as collecting sperm from the urine and then using the sperm for artificial insemination.

More Information on Erectile Dysfunction

For additional information, see the fact sheet *Erectile Dysfunction,* available from the National Kidney and Urologic Diseases Information Clearinghouse at 1–800–891–5390. This fact sheet is also available at *www.kidney.niddk.nih.gov/kudiseases/pubs/impotence/index.htm.*

Sexual Problems in Women With Diabetes

Decreased Vaginal Lubrication

Nerve damage to cells that line the vagina can result in dryness, which in turn may lead to discomfort during sexual intercourse. Discomfort is likely to decrease sexual response or desire.

Decreased or Absent Sexual Response

Diabetes or other diseases, blood pressure medications, certain prescription and over-the-counter drugs, alcohol abuse, smoking, and psychological factors such as anxiety or

depression can all cause sexual problems in women. Gynecologic infections or conditions relating to pregnancy or menopause can also contribute to decreased or absent sexual response.

As many as 35 percent of women with diabetes may experience decreased or absent sexual response. Decreased desire for sex, inability to become or remain aroused, lack of sensation, or inability to reach orgasm can result.

Symptoms include

- decreased or total lack of interest in sexual relations
- decreased or no sensation in the genital area
- constant or occasional inability to reach orgasm
- dryness in the vaginal area, leading to pain or discomfort during sexual relations

If you experience sexual problems or notice a change in your sexual response, talking to your doctor about it is the first step in getting help. Your doctor will ask you about your medical history, any gynecologic conditions or infections, the type and frequency of your sexual problems, your medications, your smoking and drinking habits, and other health conditions. A physical exam and laboratory tests may also help pinpoint causes. Your blood glucose control will be discussed. The doctor may ask whether you might be pregnant or have reached menopause and whether you are depressed or have recently experienced upsetting changes in your life.

Prescription or over-the-counter vaginal lubricant creams may be useful for women experiencing dryness.

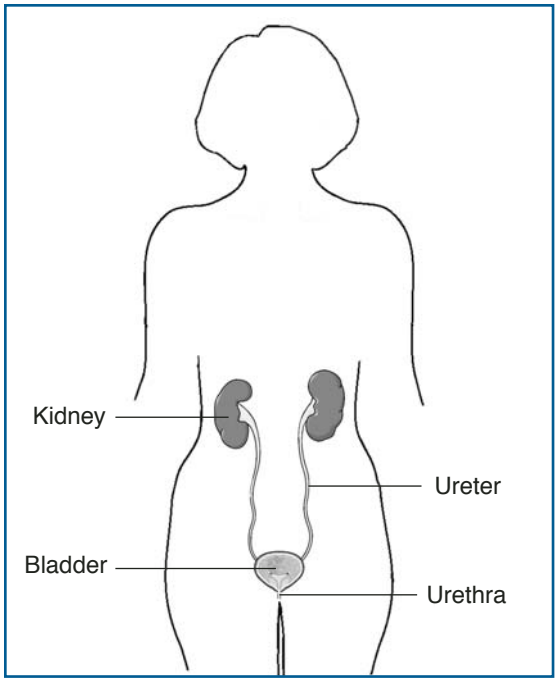
Techniques to treat decreased sexual response include changes in position and stimulation during sexual relations. Psychological counseling, as well as Kegel exercises to strengthen the muscles that hold urine in the bladder, may be helpful. Studies of drug treatments are under way.

Diabetes and Urologic Problems

Bladder dysfunction can have a profound effect on quality of life. Diabetes can damage the nerves that control bladder function. Men and women with diabetes commonly have bladder symptoms that may include a feeling of urinary urgency, frequency, getting up at night to urinate often, or leakage of urine (incontinence). These symptoms have been called *overactive bladder.* Less common but more severe bladder symptoms include difficulty urinating and complete failure to empty (retention). These symptoms are called a *neurogenic bladder.* Some evidence indicates that this problem occurs in both men and women with diabetes at earlier ages than in those without diabetes.

Neurogenic Bladder

In neurogenic bladder, damage to the nerves that go to your bladder can cause it to release urine when you do not intend to urinate, resulting in leakage. Or damage to nerves may prevent your bladder from releasing urine properly and it may be forced back into the kidneys, causing kidney damage or urinary tract infections.



The Urinary Tract

Neurogenic bladder can be caused by diabetes or other diseases, accidents that damage the nerves, or infections.

Symptoms of neurogenic bladder include

- urinary tract infections
- loss of the urge to urinate when the bladder is full
- leakage of urine
- inability to empty the bladder

Your doctor will check both your nervous system (your brain and the nerves of the bladder) and the bladder itself. Tests may include x rays and an evaluation of bladder function (urodynamics).

Treatment for neurogenic bladder depends on the specific problem and its cause. If the main problem is retention of urine in the bladder, treatment may involve medication to promote better bladder emptying and behavior changes to promote more efficient urination, called timed urination. Occasionally, people may need to periodically insert a thin tube called a catheter through the urethra into the bladder to drain the urine. Learning how to tell when the bladder is full and how to massage the lower abdomen to fully empty the bladder can help as well. If urinary leakage is the main problem, medications or surgery can help.

More Information on Neurogenic Bladder

For additional information, see the fact sheet *Nerve Disease and Bladder Control,* available from the National Kidney and Urologic Diseases Information Clearinghouse at 1–800–891–5390. This fact sheet is also available at *www.kidney.niddk.nih.gov/kudiseases/pubs/nervedisease/index.htm.*

Urinary Tract Infections

Infections can occur in any part of the urinary tract. They are caused when bacteria, usually from the digestive system, reach the urinary tract. If bacteria are growing in the urethra, the infection is called *urethritis.* The bacteria may travel up the urinary tract and cause a bladder infection, called *cystitis.* An untreated infection may go farther into the body and cause *pyelonephritis,* a kidney infection. Some people have chronic or recurrent urinary tract infections.

Symptoms of urinary tract infections may include

- a frequent urge to urinate
- pain or burning in the bladder or urethra during urination
- cloudy or reddish urine
- fatigue or shakiness

- in women, pressure above the pubic bone
- in men, a feeling of fullness in the rectum

If the infection is in your kidneys, you may be nauseous, feel pain in your back or side, and have a fever. Since frequent urination can be a sign of high blood glucose, you and your doctor should also evaluate recent blood glucose monitoring results.

Your doctor will ask for a urine sample, which will be analyzed for bacteria and pus. If you have frequent urinary tract infections, your doctor may order further tests. An ultrasound exam provides images from the echo patterns of soundwaves bounced back from internal organs. An intravenous pyelogram (IVP) uses a special dye to enhance x-ray images of your urinary tract. Another test, called cystoscopy, allows the doctor to view the inside of the bladder.

Early diagnosis and treatment are important to prevent more serious infections. To clear up a urinary tract infection, the doctor will probably prescribe an antibiotic based on the bacteria in your urine. Current recommendations are for a full 7-day course of antibiotic treatment in people with diabetes, instead of the shorter course used for other people. Kidney infections are more serious and may require several weeks of antibiotic treatment. Drinking plenty of fluids will help prevent another infection.

More Information on Urologic Problems

For additional information, see the following publications available from the National Kidney and Urologic Diseases Information Clearinghouse at 1–800–891–5390:

What I Need to Know About Urinary Tract Infections

Your Urinary System and How It Works

Imaging of the Urinary Tract

Your Kidneys and How They Work

Bladder Control for Women (series)

Urinary Incontinence in Men

Urinary Tract Infections in Adults

Nerve Problems and Bladder Control

Pyelonephritis

Cystoscopy and Ureteroscopy

These publications are also available at *www.urologic.niddk.nih.gov.*

Will I experience sexual and urologic problems sooner or later?

Risk factors are conditions that increase your chances of getting a particular disease. The more risk factors you have, the greater your chances of developing that disease or condition. Diabetic neuropathy, including related sexual and urologic problems, appears to be more common in people who

- have poor blood glucose control
- have high levels of blood cholesterol
- have high blood pressure
- are overweight
- are over the age of 40
- smoke

What can I do to prevent diabetes-related sexual and urologic problems?

You can lower your risk of sexual and urologic problems by keeping your blood glucose, blood pressure, and cholesterol close to the target numbers your doctor recommends. Being physically active and maintaining a healthy weight can also help prevent the long-term complications of diabetes. Smoking is a particular problem, and quitting will improve your health in many ways. For example, if you quit smoking, you can lower your risk not only for nerve damage but also for heart attack, stroke, and kidney disease.

More Information on Preventing Diabetes Problems

For additional information on preventing diabetes complications, including neuropathy, see the Prevent Diabetes Problems series, available from the National Diabetes Information Clearinghouse at 1–800–860–8747. These booklets are also available at *www.diabetes.niddk.nih.gov.*

Points to Remember

The nerve damage of diabetes may cause sexual or urologic problems.

- Sexual problems for men with diabetes include
  - erectile dysfunction
  - retrograde ejaculation
- Sexual problems for women with diabetes include
  - decreased vaginal lubrication
  - decreased sexual response
- Urologic problems for men and women with diabetes include
  - neurogenic bladder
  - urinary tract infections
- Controlling diabetes through diet and exercise can help prevent sexual and urologic problems.
- Treatment is available for sexual and urologic problems.

Hope Through Research

The NIDDK was established by Congress in 1950 as one of the National Institutes of Health under the U.S. Department of Health and Human Services. The NIDDK conducts and supports research on diabetes, glucose metabolism, and related conditions. For information on current studies, go to *www.niddk.nih.gov* and click on *ClinicalTrials.gov* under "Clinical Research," or call the National Diabetes Information Clearinghouse at 1–800–860–8747 or 301–654–3327.

For More Information

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The National Diabetes Information Clearinghouse (NDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health under the U.S. Department of Health and Human Services. Established in 1978, the clearinghouse provides information about diabetes to people with diabetes and to their families, health care professionals, and the public. NDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about diabetes.

Publications produced by the clearinghouse are carefully reviewed by both NIDDK scientists and outside experts. This fact sheet was reviewed by Jeanette S. Brown, M.D., Women's Continence Center, University of California at San Francisco; Kevin T. McVary, M.D., Department of Urology, Northwestern University; and Hunter Wessells, M.D., Department of Urology, University of Washington.

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